

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 11/10/09 with respect to claims 43-45, 67-69, 83 and 85-87 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 43-45, 67, 83 and 85-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 3,159,508 hereinafter Chreitzberg.

Kitoh teaches a lithium battery comprising a battery case 11, a first battery lid (16), a second battery lid (17), an electrically conductive terminal pin 15 extending through the first end cap and electrically insulated from the case by sealing member 18, an electrode assembly disposed within the case with at least one electrode in electrical communication with the pin and the opposite electrode insulated from the same pin via a separator, wherein flexible conductive tabs 5 are disposed past a center point of the second battery lid and are electrically connected to the second battery lid. Kitoh further teaches that the tab is not attached to the second battery lid continuously over a distance extending from the first location to the second location. Kitoh also teaches that the case excludes a fill hole, the tabs are welded to the terminal pin and/or cap, the end

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cap can be made of an electrical insulative material that the pin extends through and the case is electrically conducting (figures and column 2, line 52 – column 5, line 43).

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location.

As seen in figure 1, Chreitzberg teaches a battery wherein the tab 8 (on the right hand side of the figure) connects to the negative electrode 3 (also on the right hand side of the figure) and extends to the negative terminal 7 (i.e. extends across the whole interior not immobilized) and is attached to the terminal in the cap only at the terminal (i.e. is only immobilized at the terminal in the cap), see also column 2, line 44 et seq.

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location past the center point from the first location of the cap as taught by Chreitzberg in order to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

With respect to claims 67 and 87 Chreitzberg teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Chreitzberg does not teach the use of PtIr alloy as the pin.

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Cogan teaches a biomedical device wherein the wire electrode is made of PtIr alloy because it can record or stimulate physiological function. See Column 3, Lines 43-56.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Chreitzberg, in order to provide an electrode pin that has reduced electrical resistance thereby improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Claims 43-45, 67, 83 and 85-87 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,399,242 hereinafter Kitoh in view of U.S. Patent No. 5,912,089 hereinafter Kitano.

Kitoh does not teach that the conductive tab is electrically connected to the second battery lid such that the tab is immobilized only at the second location.

As seen in figures 2 and 3, Kitano teaches a battery wherein the tab 6 extends from an area adjacent to the case to a second location A and is attached to the cap only at location A (i.e. immobilized at location A) and is not immobilized over the entire distance from the first location to the second location (column 3, lines 30-40).

At the time of the invention it would have been obvious to one having ordinary skill in the art to attach the flexible conductive tabs of Kitoh only at a second location

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past the center point from the first location of the cap as taught by Kitano in order to reduce internal resistance and facilitate current extraction from the electrode and also since it has been held that the rearrangement of parts is within a skilled artisans level of skill in the art. In re Japikse, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950).

With respect to claims 67 and 87 Kitano teaches that the distance from the first location to the second location is greater than the radius of the cap and the tab extends past the center point of the cap. See Figure 1.

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 5,755,759 hereinafter Cogan.

Kitoh as modified by Kitano does not teach the use of PtIr alloy as the pin.

Cogan as discussed above is incorporated herein.

At the time of the invention it would have been obvious to having ordinary skill in the art to use PtIr alloy as the pin for the battery of Kitoh as modified by Kitano, in order to provide an electrode pin that has reduced electrical resistance thereby improving the overall performance of the battery. If a technique has been used to improve one device (an electrode made of PtIr), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

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Claims 68-71, 73-75 and 77-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Chreitzberg as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Chreitzberg does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one electrode is present in the slot and the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Chreitzberg as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

With regards to claim 70, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. MPEP 2144.04 V (C).

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With regards to claim 80, Kitoh as modified by Chreitzberg and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

Claims 68-71, 73-75 and 77-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitoh in view of Kitano as applied to claim 43 above, and further in view of U.S. Patent No. 4,053,687 hereinafter Coibion.

Kitoh as modified by Kitano does not teach that the electrodes and separators are wound around the pin to form a spiral role on the pin.

Coibion teaches an electrochemical cell wherein a combined cylindrical (i.e. tube shaped) mandrel/pin (that reinforces the electrode assembly) is used to hold an uncoated region of the electrode in a longitudinal slot during winding such that only one electrode is present in the slot, the electrode can be welded in the slot of the mandrel/pin (figures 5-9 and Column 4, line 62—Column 6, line 3).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a combined mandrel/pin in Kitoh as modified by Kitano as taught by Coibion in order to properly immobilize the electrode assembly thereby preventing damage to the electrodes which could cause short circuiting when the battery is exposed to large mechanical forces or prolonged vibration.

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With regards to claim 70, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for having a separate mandrel and pin. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a separate mandrel and pin, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. MPEP 2144.04 V (C).

With regards to claim 80, Kitoh as modified by Kitano and Coibion teaches the claimed invention except for the cross-sectional shape of the mandrel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to change the shape of the mandrel, since it has been held that a change in shape is generally recognized as being within the level of ordinary skill in the art. MPEP 2144.04 IV (B).

### ***Allowable Subject Matter***

Claims 72 and 76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or fairly suggest that the mandrel comprises titanium and a channel to inject electrolyte and there is no motivation for a skilled artisan to modify the prior art of record to make the instantly claimed invention of claims 72 or 76.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/  
Primary Examiner, Art Unit 1795